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# Polygraph thesis lives on in academic texts, additional research



Centerville, Ohio, Police Chief Bruce Robertson wanted to add empirical basis to the art of polygraph as he wrote his Center for Homeland Defense and Security master's degree thesis, ["The Use of an Enhanced Polygraph Scoring Technique in Homeland Security: The Empirical Scoring System – Making a Difference."](#)

As a polygraphist since 1988, he used his professional expertise coupled with CHDS research to examine how traditional hand-scoring lie detection techniques compare with what was called "Empirical Based Scoring." His work was a response to a 2003 National Research Council study, commissioned by Congress, to gauge the status and value of polygraph tests.

**Download the thesis:** ["The Use of an Enhanced Polygraph Scoring Technique in Homeland Security: The Empirical Scoring System – Making a Difference"](#)

1) Robertson's research traces the use of physiology in detecting deception from its World War I origins to present. He also cites success with polygraphs in war zones such as Iraq and Afghanistan while also citing cases in which polygraph techniques were used, yet controversial: the case of CIA analyst Aldrich Ames who was alleged to have sold secrets to the old Soviet Union and the case of nuclear scientist Wen Ho Lee, alleged to have transferred secrets to Chinese contacts.

The latter case is the crux of the thesis. Original and subsequent polygraph practitioners disagreed as to whether the results of traditional hand-scoring methods did or did not show truthfulness.

"The interpretation and scoring of polygraph charts is the focal point of this thesis," Robertson wrote.

The thesis outlines the basics of widely used techniques – the three-position and seven position test data analysis systems, or TDA. Both score responses to relevant and comparison questions on their respective scales. Those methods are compared with the Empirical Scoring System, also a TDA that is "an evidence-based numerical hand-scoring technique used for test data analysis of polygraph charts obtained from comparison question tests." The aim is to determine whether the ESS, which is viewed by Robertson as a simpler technique, was more or less accurate than more traditional systems, which face criticism from some quarters over accuracy and value. For the thesis, 12 scorers in three groups scored 22 tests, with each group using one of the three techniques.

"The employment of an empirically based scoring mechanism would allow polygraphists to render an opinion based upon confidence in a scientifically derived result," he wrote.

2) As a result of his research, Robertson believes the polygraph professional community needs to do better in communicating understanding of the underpinning science of the techniques used.

"The 'a-ha moment' for me in doing the literature review and talking to people is that decision-makers need to be better educated into what polygraph is and how they need to make policy choices based on polygraph," he said.

While there was no conclusion that ESS was superior, the thesis did reinforce his contention that the method was at least as effective.

"I do think it moves the profession forward potentially to where it could really save lives," he said. "Yes, there is still a lot of research to be done in the field, but that's why I took on this thesis."

3) Robertson's CHDS thesis was subsequently published in two journals, the peer-reviewed Polygraph, and the January 2013 edition of The Police Polygraph Digest. It is also used in training workshops.

“We will continue to study ESS and will also study other scoring techniques,” Robertson said. “That’s one of the things the thesis has driven me to — I never thought in my wildest dreams I would be a researcher in polygraph.”

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